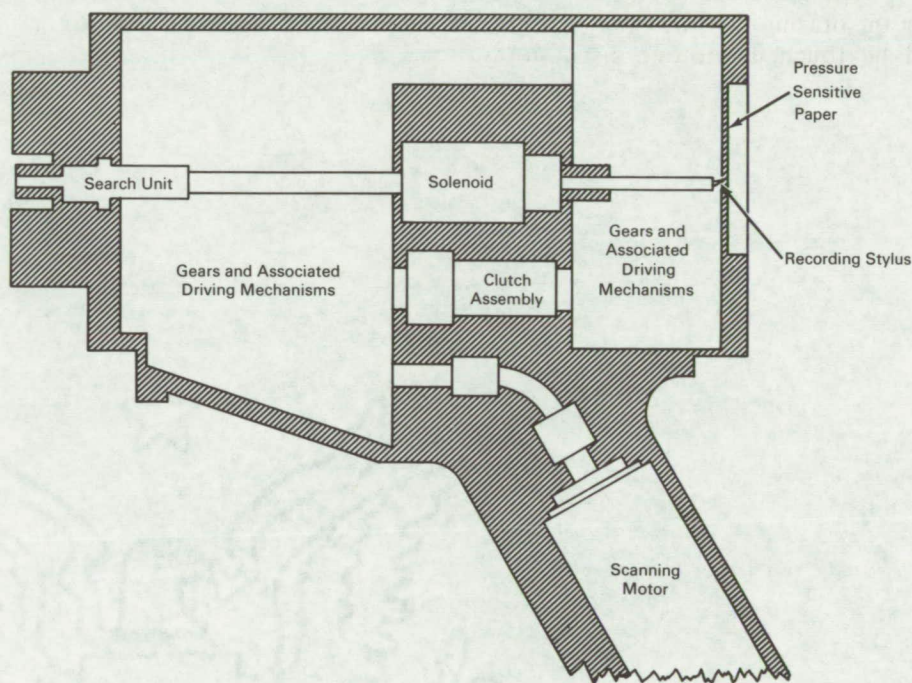


NASA TECH BRIEF



NASA Tech Briefs are issued to summarize specific innovations derived from the U. S. space program and to encourage their commercial application. Copies are available to the public from the Clearinghouse for Federal Scientific and Technical Information, Springfield, Virginia 22151.

Ultrasonic Hand Tool Allows Convenient Scanning of Spot Welds



The problem:

To devise a hand tool for the rapid and mechanical scanning of spot welds for discontinuities. Current ultrasonic techniques do not allow convenient scanning of areas that are not readily accessible to bulky equipment.

The solution:

A small, portable, electrically powered hand tool which, coupled with auxiliary ultrasonic equipment, can be used for scanning small areas conveniently.

How it's done:

The handheld tool consists of an ultrasonic search unit that carries a housing assembly accommodating

a solenoid. The solenoid plunger is fitted with an extension, and a recording stylus attached to the end of the extension contacts pressure sensitive paper located in the cavity at the rear of the unit. The scanning motor causes the mechanism to rotate about the centerline of the main cylindrical body. While rotating, the clutch assembly causes an outward translation in a radial direction, thus producing a spiral motion.

In operation, the front end of the scanner is placed on the area being examined. The spiral scanning motion of the ultrasonic search unit is recorded as a spiral pattern on the pressure sensitive paper. Discontinuities will appear as breaks in the spiral pattern.

(continued overleaf)

Note:

Inquiries concerning this invention may be directed to:

Technology Utilization Officer
Marshall Space Flight Center
Huntsville, Alabama 35812
Reference: B66-10289

Patent status:

Inquiries about obtaining rights for the commercial use of this invention may be made to NASA, Code GP, Washington, D.C. 20546.

Source: D. K. Mitchell
of The Boeing Company
under contract to
Marshall Space Flight Center
(M-FS-539)